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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/642,801

08/21/2000

Richard D. Gunlock

P00-3222

8628

25235

7590

08/30/2004

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EXAMINER

YUSSUF, SAJID

ART UNIT

PAPER NUMBER

2141

DATE MAILED: 08/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/642,801

Applicant(s)

GUNLOCK ET AL.

Examiner

Sajid A Yussuf

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2000 and 21 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/21/00.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

The certified copy has been received.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rodeheffer et al. (US Patent No. 5,260,945 and Rodeheffer hereinafter) in view of Schmidt et al. (US Patent Application Publication No. 2002/0034178 and Schmidt hereinafter).

1. As per claims 1,9 Rodeheffer discloses a memory system contains machine readable instructions comprising instructions for (i.e., software or code): determining a status associated with the at least one port, the status capable of having at least an active (i.e., working), a normal, (i.e., working) a probationary (i.e., Skeptic or WAIT), and a failed (i.e., broken) value, (See Column 2 Lines 47-67 & Column 3 Lines 1-24); when the status has a failed (i.e., broken) value, of detecting a repair associated with the at least one port (i.e., link)

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and when repair is detected advancing the status to a value selected from the group consisting of active (i.e., working) and probationary (i.e., skeptic or WAIT) status, (See Column 3 Lines 3-26); detecting when the port (i.e., link) operates without error for a predetermined period (i.e., time) and thereupon advancing the status from the probationary (i.e., skeptic or WAIT) value to a value selected from the group consisting of active (i.e., working) and normal (i.e., working), (See Column 5 Lines 50-67 and Column 6 Lines 1-27); and preferentially routing exchanges over a port (i.e., link) of the at least one port having a status value selected from the group of active (i.e., working) and normal (i.e., working) when a port having such status exists and a target node of the exchange is reachable over that port.

However, Rodeheffer does not explicitly teach a node for a storage area network comprising at least one processor; at least one port for connection to a storage area network coupled to the at least one processor; and a memory system coupled to the at least one processor;

Schmidt teaches a node for a storage area network, (See Paragraph 0138 Lines 1-7) comprising at least one processor (See entire Paragraph 0003); at least one port for connection to a storage area network (i.e., fibre channel) coupled to the at least one processor (i.e., workstation or supercomputer); (See entire Paragraph 0007) and a memory system coupled to the at least one processor; wherein a workstation or supercomputer is interpreted as having a processor (See entire Paragraph 0007).

Therefore it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to modify the teaching of Rodeheffer with the teachings of Schmidt to include a node for a storage area network comprising at least one processor; at least one port for connection to a storage area network coupled to the at least one processor; and a memory system coupled to the at least one processor; with the motivation to provide for additional address capacity such that a new address is created within the switch itself for routing data within the switch... in the event of a port failure, affected frames can be

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redirected from the failed port by employing the described translation and mapping operations, (See Schmidt Entire Paragraph 0012 & 0014).

2. As per claims 2,10 Rodeheffer discloses the claimed invention as described above.

However, Rodeheffer does not explicitly teach the port is a fibre channel N-port, L_port, or NL_port.

Schmidt teaches the port is a fibre channel N-port, L_port, or NL_port, (See Entire Paragraph 0007).

Therefore it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to modify the teaching of Rodeheffer with the teachings of Schmidt to include a fibre channel N-port, L_port, or NL_port, with the motivation to provide for additional address capacity such that a new address is created within the switch itself for routing data within the switch... in the event of a port failure, affected frames can be redirected from the failed port by employing the described translation and mapping operations, (See Schmidt Entire Paragraph 0012 & 0014).

3. As per claims 3,11 Rodeheffer teaches the claimed invention as described in claims 1-2 & 9-10 above and furthermore discloses the memory system contains machine readable instructions further comprising instructions for: determining that a port having an associated status of probationary has encountered excessive errors, and when said excessive errors are detected for changing that status to failed, (See Column 4 Lines 10-48).

4. As per claims 4,12 Rodeheffer teaches the claimed invention as described in claims 1-3 & 9-11 above and furthermore discloses the machine readable instructions for determining that a port (i.e., link) having an associated status of probationary (i.e., skeptic or WAIT) has encountered excessive errors includes instructions of ignoring errors detected within a predetermined period of time of the port seeing a network login attempt made by a second node of the network, (See Column 5 Lines 26-61).

5. As per claims 5,13 Rodeheffer teaches the claimed invention as described in claims 1-4 & 9-12 above and furthermore discloses the memory system contains machine readable instructions further comprising instructions for taking laser diodes (i.e., link cable) of a port of the at least one port offline when status associated with that port is changed to failed, and for placing those laser diodes (i.e., link cable) online when said status is changed to a status selected from the group consisting of active (i.e., working), normal (i.e., working), and probationary (i.e., skeptic or WAIT), (See Column 4 Lines 60-67 & Column 5 Lines 1-25).
 6. As per claims 6,14 Rodeheffer teaches the claimed invention as described in claims 1-5 & 9-13 above and furthermore discloses the memory system contains machine readable instructions further comprising instructions for conducting login attempts (i.e., power on) over each port (i.e., link) of the at least one port (i.e., link), for determining target nodes reachable through each port (i.e., link), and for recording in the memory system identities of target nodes reachable through each port, (See Column 5 Lines 12-61).
 7. As per claims 7,15 Rodeheffer teaches the claimed invention as described in claims 1-6 & 9-14 above and furthermore discloses the memory system contains machine readable instructions further comprising instructions for promoting status associated with a port (i.e., Link) from probationary (i.e., skeptic or WAIT) to a value selected from the group consisting of normal (i.e., working) and active (i.e., working) when an exchange to a particular target node of the target nodes is ending and that target node is not reachable through any port (i.e., Link) already having an associated status selected from the group consisting of normal (i.e., working) and active (i.e., working), (See Column 7 Lines 14-42 & Column 3 Lines 65-67 & Column 4 Lines 1-9).
 8. As per claims 8,16 Rodeheffer teaches the claimed invention as described in claims 1-7 & 9-15 above and furthermore discloses the memory system contains machine readable
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instructions further comprising instructions for testing a port (i.e., link) for repair if that port has failed (i.e., broken) status, an exchange to a particular target node of the target nodes is pending, and the particular target node is not reachable through any other port already having an associated status selected from the group consisting of probationary (i.e., skeptic or WAIT), normal (i.e., working) and active (i.e., working), (See Column 6 Lines 51-67 and Column 7 Lines 1-13).

Response to Arguments

Applicant's arguments filed May, 06 2004 have been fully considered but they are not persuasive. Additionally, Applicant's arguments with respect to claims 1-16 have been considered but are moot.

Applicant states that "To establish a prima facie case of obviousness under 35 U.S.C. §103, all claim limitations must be disclosed or suggested by the cited references. See, MPEP 2143.03. The '945 patent, alone or in combination with the '178 application fails to teach or disclose every limitation recited in claims 1 and 9. Therefore, the '945 patent, alone or in combination with the '178 application, cannot establish a prima facie case of obviousness."

Regarding claims 1 and 9 rejected under 35 U.S.C. §103 (a) as being obvious, Applicant asserts that "the '945 patent, alone or in combination with the '178 application, cannot establish a prima facie case of obviousness." In response to Applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where rejection are based on combinations of references. See *In re Keller*, 642 F.2d 41, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Furthermore, Applicant's arguments with respect to claims 1 and 9 have been considered but are moot, wherein Examiner submits that the broad concepts upon which the applicant relies are suggested by the prior art as shown in the above rejections under 35 U.S.C. §103 (a).

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Applicant asserts that "Independent claim 1 explicitly recites the limitation of preferentially routing exchanges over a port of the at least one port having a status value selected from the group of active and normal when a port having such status exists and a target node of the exchange is reachable over that port. Similarly, claim 9 explicitly recites the limitation of preferentially assigning exchanges to ports having a status value selected from the group of active and normal when at least one port having such status exists and a target node of the exchange is reachable over that port.

The Action asserts that the '945 patent discloses this limitation, but provides no citation to the text of the '945 patent to support the assertion. Applicant disagrees. A close inspection of the '945 patent reveals that the '945 patent neither discloses nor suggests preferentially routing exchanges over a port of the at least one port having a status value selected from the group of active and normal when a port having such status exists and a target node of the exchange is reachable over that port, as recited in claim 1, or preferentially assigning exchanges to ports having a status value selected from the group of active and normal when at least one port having such status exists and a target node of the exchange is reachable over that port, as recited in claim 9. Therefore, the '945 patent cannot establish a prima facie case of obviousness of claims 1 and 9. Accordingly, Applicants request the rejection of claims 1 and 9 under 35 U.S. C. §103(a) be withdrawn."

Examiner disagrees and submits that the broad concepts upon which the applicant relies are suggested by the prior art as show in the above rejections under 35 U.S. C. §103(a). Specifically, the prior art teaches preferentially assigning exchanges to ports having a status value selected from the group of active and normal when at least one port having such status exists and a target node of the exchange is reachable over that port; wherein a port is broadly interpreted as an interface through which data is transferred between a computer and other devices. Therefore the prior art referenced at (See Column 3 Lines 65-67 & Column 4 Lines 1-8) does in fact disclose the above-mentioned argument wherein a port is broadly interpreted as a switch

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wherein the switch has a specific status value of active or inactive. If the port (i.e., switch) is active then it is understood that a certain destination is reachable from that active port.

Dependent claims 2-8 and 10-16 depend from independent claims 1-9 and are therefore not allowable by virtue of their dependency. In addition, claims 2-8 and 10-16 recite limitations that are disclosed or suggested by the '945 patent, in combination with the ' 178 application.

Applicant states that "the limitation that the machine readable instructions for determining that a port having an associated status of probationary has encountered excessive errors includes instructions of ignoring errors detected within a predetermined period of time of the port seeing a network login attempt made by a second node of the network. Claim 12, which depends from claim 11, recites the limitation of determining that a port having an associated status of probationary has encountered excessive errors ignores at least some errors detected within a predetermined period of time of the port seeing a network login attempt made by a second node of the network."

Applicant states that prior art does not assert "ignoring errors detected within a predetermined period of time of the port seeing a network login attempt made by a second node of the network, as recited in claims 4 and 12."

Examiner disagrees and submits that the broad concepts upon which the applicant relies are suggested by the prior art as show in the above rejections under 35 U.S. C. §103(a). Specifically, the prior art teaches ignoring (i.e., wait time) errors detected within a predetermined period of time wherein the wait time is used for attempted logins or active signals. The skeptic defines a certain policy with a specific wait time to test the port for reliability wherein it is the skeptic that provides the login attempts and sets policies to ignore certain erroneous states, if they occur wherein they would provide no new information nor be able to become active for a predetermined period of time.

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Applicant asserts that “the cited text neither discloses nor suggests taking laser diodes of a port of the at least one port offline when status associated with that port is changed to failed, and for placing those laser diodes online when said status is changed to a status selected from the group consisting of active, normal, and probationary, as recited in claims 5 and 13.”

Examiner disagrees and submits that the broad concepts upon which the applicant relies are suggested by the prior art as show in the above rejections under 35 U.S. C. §103(a). Specifically, the prior art teaches of a communications link (i.e., a cable or laser diode) of a port of the at least one port offline when status associated with that port is changed to failed, wherein the failed status is interpreted as broken and for placing those laser diodes (i.e., cable) online passing a skeptic recovery when said status is changed to a status selected from the group consisting of active, normal, and probationary, wherein the states defined in the prior art are similar to those discussed above such as Wait, Dead, Broken, Active. Examiner further asserts that a laser diode when defined broadly is any type of electronic device that carries information from one spatial area to another. Thus, with regards to the claim a laser diode is interpreted as a cable that passes information from one device to another.

Applicant asserts that “conducting login attempts over each port having online laser diodes, determining target nodes reachable through each port, and recording in the memory system identities of target nodes reachable through each port, as recited in claims 6 and 14.”

Examiner disagrees and submits that the broad concepts upon which the applicant relies are suggested by the prior art as show in the above rejections under 35 U.S. C. §103(a). Specifically, the prior art teaches of a communications link (i.e., a cable or laser diode) when plugged in is connected wherein it is reachable throughout a given area of connection. Furthermore, a port as defined above is interpreted as a switch wherein the switch has a memory that stores specific addresses in its memory system. An example of such storage would be the storage of static IP

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addresses of gateways, or primary routers that provide a broadcast to many external/internal networks. Furthermore, as discussed above the skeptic conducts login attempts over each port having online laser diodes, determining target nodes reachable through each port, and recording in the memory system identities of target nodes reachable through each port wherein the skeptic tests the for connection and from the test reachable nodes are discovered wherein if discovered (i.e., a link is working) then the state is moved to active or good.

Applicant asserts "the cited text neither discloses nor suggests testing a port for repair if that port has failed status, an exchange to a particular target node of the target nodes is pending, and the particular target node is not reachable through any other port already having an associated status selected from the group consisting of probationary, normal and active, as recited in claims 8 and 16."

Examiner disagrees and submits that the broad concepts upon which the applicant relies are suggested by the prior art as show in the above rejections under 35 U.S. C. §103(a). Specifically, the prior art teaches testing a port is interpreted as constant probing of the port to obtain feedback and applying certain dead time or wait times in order for the port to reset itself or an administrator to fix the issue. The reason for putting the port in such a state is to essentially save time traversing all ports to determine which port is reachable. When a port state has a failed (i.e., broken) status, to traverse to the target node requires probing other nodes in the network in order to ensure transfer of data, (See Column 4 Lines 60-67 & Column 5 Lines 1-25). Furthermore, Examiner asserts that Applicant review the prior art in its entirety wherein Examiner asserts Applicant to further refer to, (See Column 6 Lines 51-67 & Column 7 Lines 1-13).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A. Malladi et al. (US Patent No. 5,638,518) discloses a node loop core for implementing transmission protocol in fibre channel;

B. Sicola et al. (US Patent No. 6,643,795) discloses a controller based bi-directional remote copy system with storage site failover capability;

C. Pothapragada et al. (US Patent No. 6,389,432) discloses intelligent virtual volume access;

D. Cowan et al. (US Patent No. 6,457,050) discloses a system and method for dynamically restoring communications within a network;

E. Singhal et al. (US Patent No. 6,658,478) discloses a data storage system;

F. Galand et al. (US Patent No. 6,038,212) discloses a method and system for optimizing the connection set up time in high-speed communication networks for recovering from network failure;

G. Croslin et al. (US Patent No. 6,327,669) discloses a centralized restoration of a network using preferred routing tables to dynamically build an available preferred restoral route; and

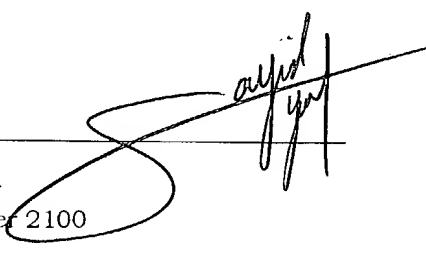
H. Grover et al. (US Patent No. 6,377,543) discloses a path restoration of networks;

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sajid A Yussuf whose telephone number is (703) 305-8752. The examiner can normally be reached on Monday-Thursday 7:30-5:00 PM and Alternate Fridays.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (703) 305-4003. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3718.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



Sajid Yussuf
Patent Examiner
Technology center 2100
23 August 2004



RUPAL DHARIA
SUPERVISORY PATENT EXAMINER